DISCIPLINE ***ELECTRICAL***	SEMESTER ***4TH***	NAME OF THE TEACHING FACULTY Binayak Satpathy (PTGF Electronics)
SUBJECT ***Electrical Measurement & Instrumentation***	NO. OF DAYS/WEEK CLASS ALLOTTED - 75	SEMESTER FROM DATE 05.04.2021 to 30.06.2021 No. of week excluding holiday - 12
WEEK	CLASS DAY	THEORY TOPICS
1ST	01	Define Accuracy, precision, Errors, Resolutions Sensitivity and tolerance.
	02	Classification of measuring instruments.
	03	Explain Deflecting, controlling and damping arrangements in indicating type of instruments.
	04	Calibration of instruments.
	05	Describe Construction, principle of operation, errors, ranges merits and demerits of: Moving iron type instruments.
2ND	06	Describe Construction, principle of operation, errors, ranges merits and demerits of: Permanent Magnet Moving coil type instruments.
	07	Revision of MI & PMMC
	08	Describe Construction, principle of operation, errors, ranges merits and demerits of: Dynamometer type instruments
	09	. Describe Construction, principle of operation, errors, ranges merits and demerits of: Rectifier type instruments.
	10	Revision of Dynamometer & Rectifier type instruments.
3RD	11	Describe Construction, principle of operation, errors, ranges merits and demerits of: Induction type instruments
	12	Revision of Induction type instruments.
	13	Extend the range of instruments by use of shunts and Multipliers.
	14	Solve Numerical
	15	Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)
4TH	16	The Errors in Dynamometer type wattmeter and methods of their correction
	17	Discuss Induction type watt meters.
	18	ENERGYMETERS AND MEASUREMENT OF ENERGY Introduction
	19	Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments.
	20	Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments.
5TH	21	Testing of Energy Meters.
	22	MEASUREMENT OF SPEED, FREQUENCY AND POWER FACTOR
	23	Tachometers, types and working principles.
	24	Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters.
	25	Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters.
6TH	26	Principle of operation and construction of Mechanical and Electrical resonance

		Type frequency meters.
	27	Principle of operation and working of Dynamometer type single phase and three phase power factor meters.
	28	Principle of operation and working of Dynamometer type single phase and three phase power factor meters.
	29	Classification of resistance. Measurement of low resistance by potentiometer method.
	30	Measurement of medium resistance by wheat Stone bridge method.
7TH	31	Measurement of high resistance by loss of charge method.
	32	Construction, principle of operations of Megger & Earth tester for insulation resistance and earth resistance measurement respectively.
	33	Construction, principle of operations of Megger & Earth tester for insulation resistance and earth resistance measurement respectively.
	34	Construction and principles of Multimeter. (Analog and Digital)
	35	Measurement of inductance by Maxewell's Bridge method.
8TH	36	Measurement of capacitance by Schering Bridge method.
	37	Define Transducer, sensing element or detector element and transduction elements.
	38	Classify transducer. Give examples of various class of transducer.
	39	Resistive transducer - Linear and angular motion potentiometer.
	40	Thermistor and Resistance thermometers.
9TH	41	Wire Resistance Strain Gauges.
	42	Inductive Transducer - Principle of linear variable differential Transformer (LVDT) & Uses of LVDT.
	43	Capacitive Transducer- General principle of capacitive transducer.
	44	Variable area capacitive transducer.
	45	Change in distance between plate capacitive transducer.
10TH	46	Piezo electric Transducer and Hall Effect Transducer with their applications.
	47	OSCILLOSCOPE -
	48	Principle of operation of Cathode Ray Tube.
	49	Principle of operation of Oscilloscope (with help of block diagram).
	50	Measurement of DC Voltage & current.
11TH	51	Measurement of AC Voltage, current, phase & frequency.
	52	Revision of chapter – 1 & Previous year question discussion.
	53	Revision of chapter – 2 & Previous year question discussion.
	54	Revision of chapter – 3 & Previous year question discussion.
	55	Revision of chapter – 4 & Previous year question discussion.
12TH	56	Revision of chapter – 5 & Previous year question discussion.
	57	Revision of chapter – 6 & Previous year question discussion.
	58	Revision of chapter – 7 & Previous year question discussion.
	59	Revision of chapter – 8 & Previous year question discussion.
	60	Revision of chapter & Previous year question discussion.